FIG. 1

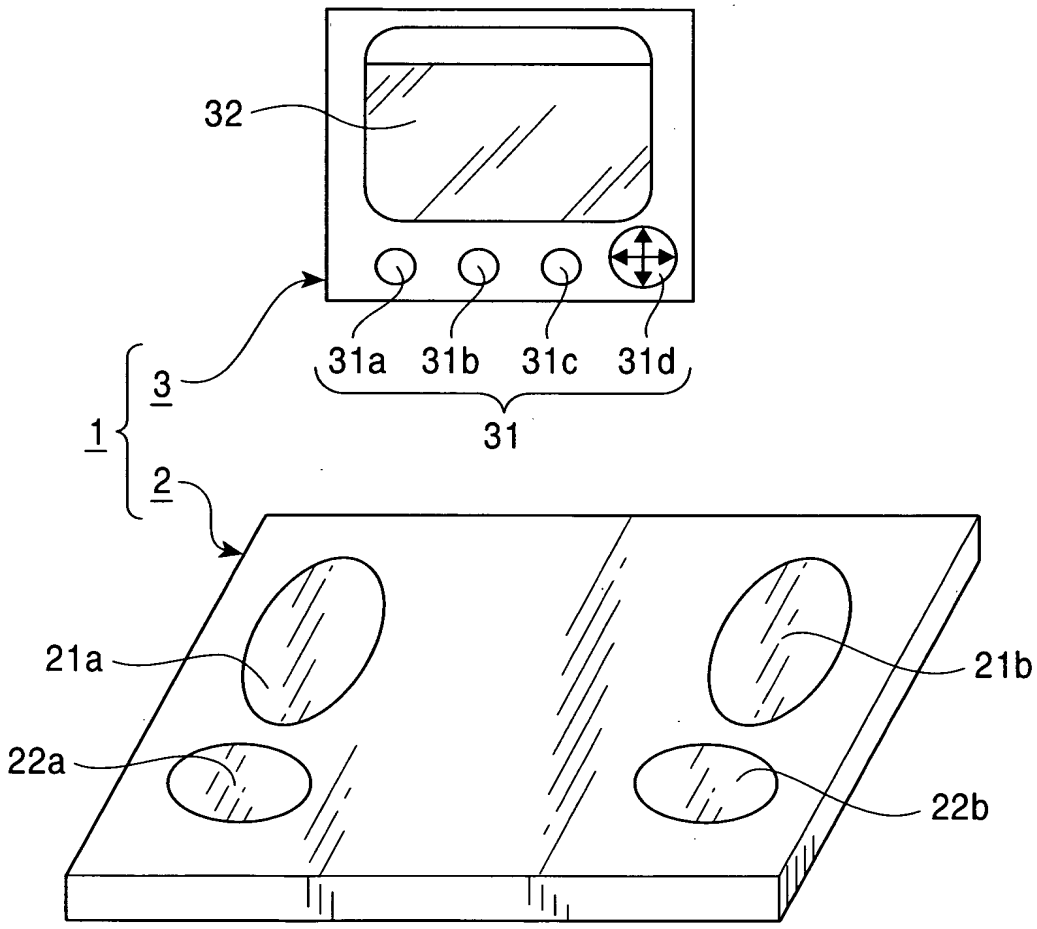


FIG. 2

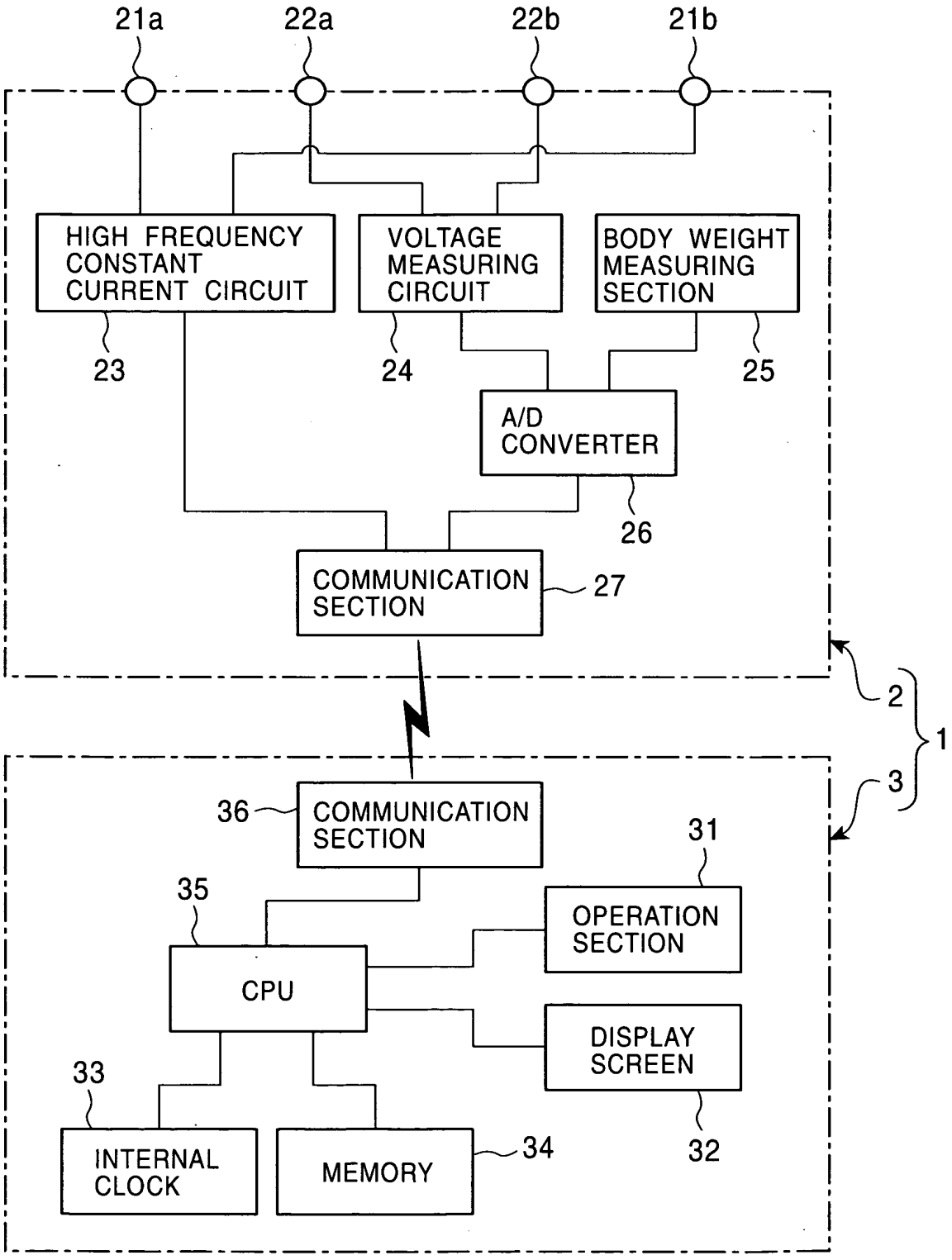

21a
22a
22b
21b
HIGH FREQUENCY CONSTANT CURRENT CIRCUIT
VOLTAGE MEASURING CIRCUIT
BODY WEIGHT MEASURING SECTION
23
24
25
A/D CONVERTER
26
COMMUNICATION SECTION
27
2
1
3
36
COMMUNICATION SECTION
31
35
OPERATION SECTION
CPU
DISPLAY SCREEN
33
INTERNAL CLOCK
MEMORY
34
32

FIG. 3

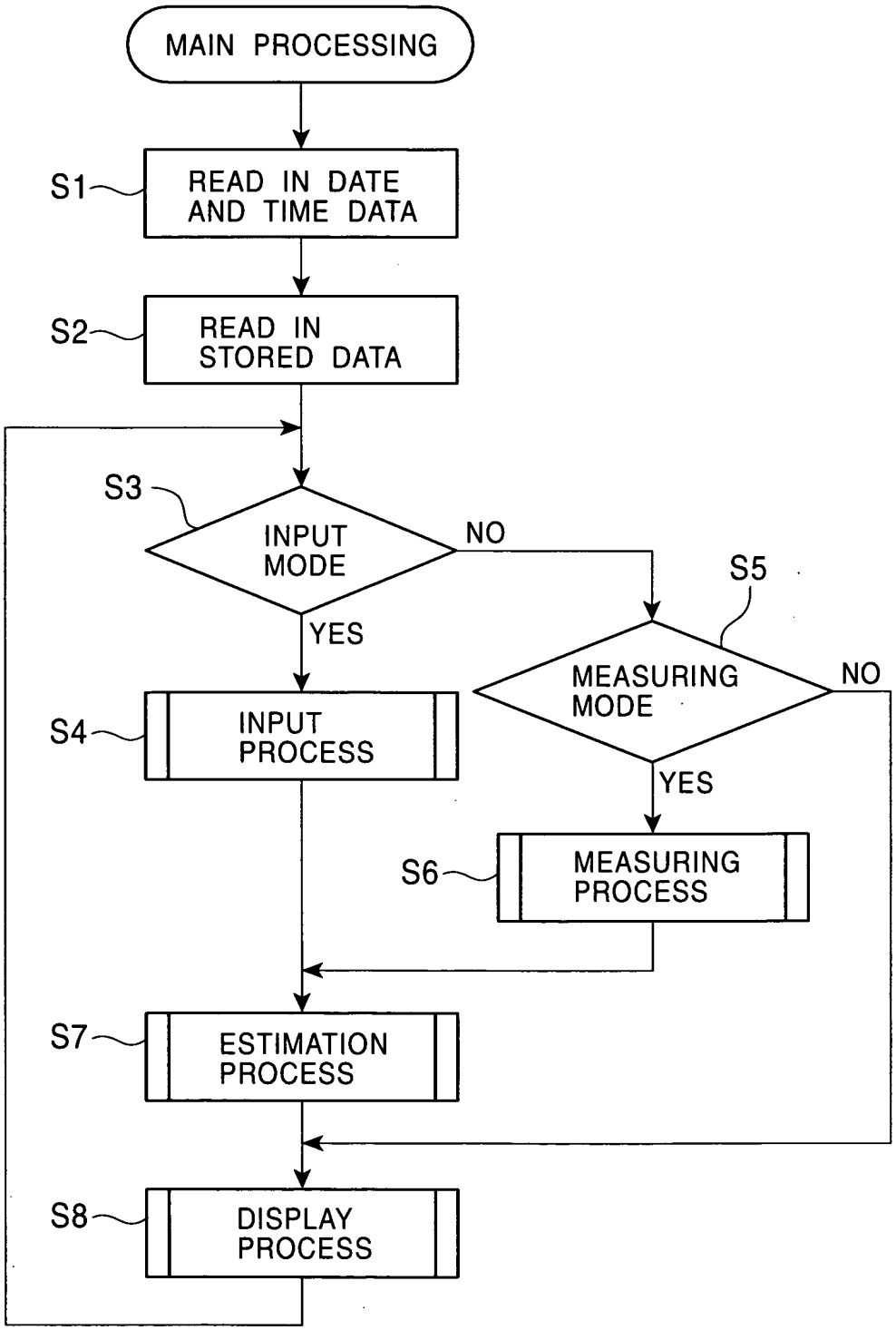

MAIN PROCESSING
S1
READ IN DATE AND TIME DATA
S2
READ IN STORED DATA
S3
INPUT MODE
NO
YES
S4
INPUT PROCESS
S5
MEASURING MODE
NO
YES
S6
MEASURING PROCESS
S7
ESTIMATION PROCESS
S8
DISPLAY PROCESS

FIG. 4

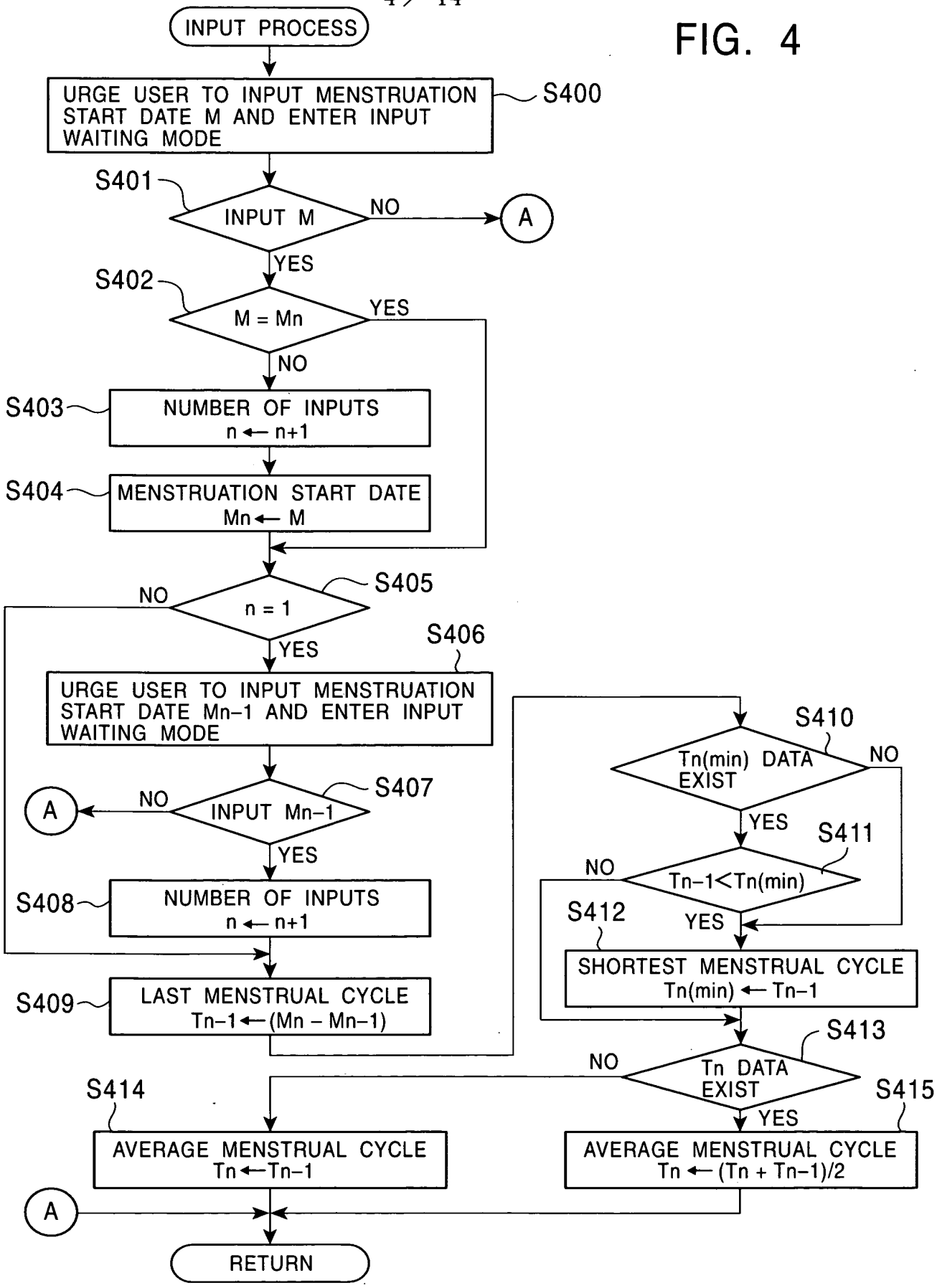

INPUT PROCESS
URGE USER TO INPUT MENSTRUATION START DATE M AND ENTER INPUT WAITING MODE
S400
S401
INPUT M
NO
A
YES
S402
M = Mn
YES
NO
S403
NUMBER OF INPUTS
n ← n+1
S404
MENSTRUATION START DATE
Mn ← M
S405
n = 1
NO
YES
S406
URGE USER TO INPUT MENSTRUATION START DATE Mn-1 AND ENTER INPUT WAITING MODE
A
NO
S407
INPUT Mn-1
YES
S408
NUMBER OF INPUTS
n ← n+1
S409
LAST MENSTRUAL CYCLE
Tn-1 ← (Mn - Mn-1)
S410
Tn(min) DATA EXIST
NO
YES
S411
Tn-1<Tn(min)
NO
YES
S412
SHORTEST MENSTRUAL CYCLE
Tn(min) ← Tn-1
S413
Tn DATA EXIST
NO
YES
S414
AVERAGE MENSTRUAL CYCLE
Tn ← Tn-1
S415
AVERAGE MENSTRUAL CYCLE
Tn ← (Tn + Tn-1)/2
A
RETURN

FIG. 5

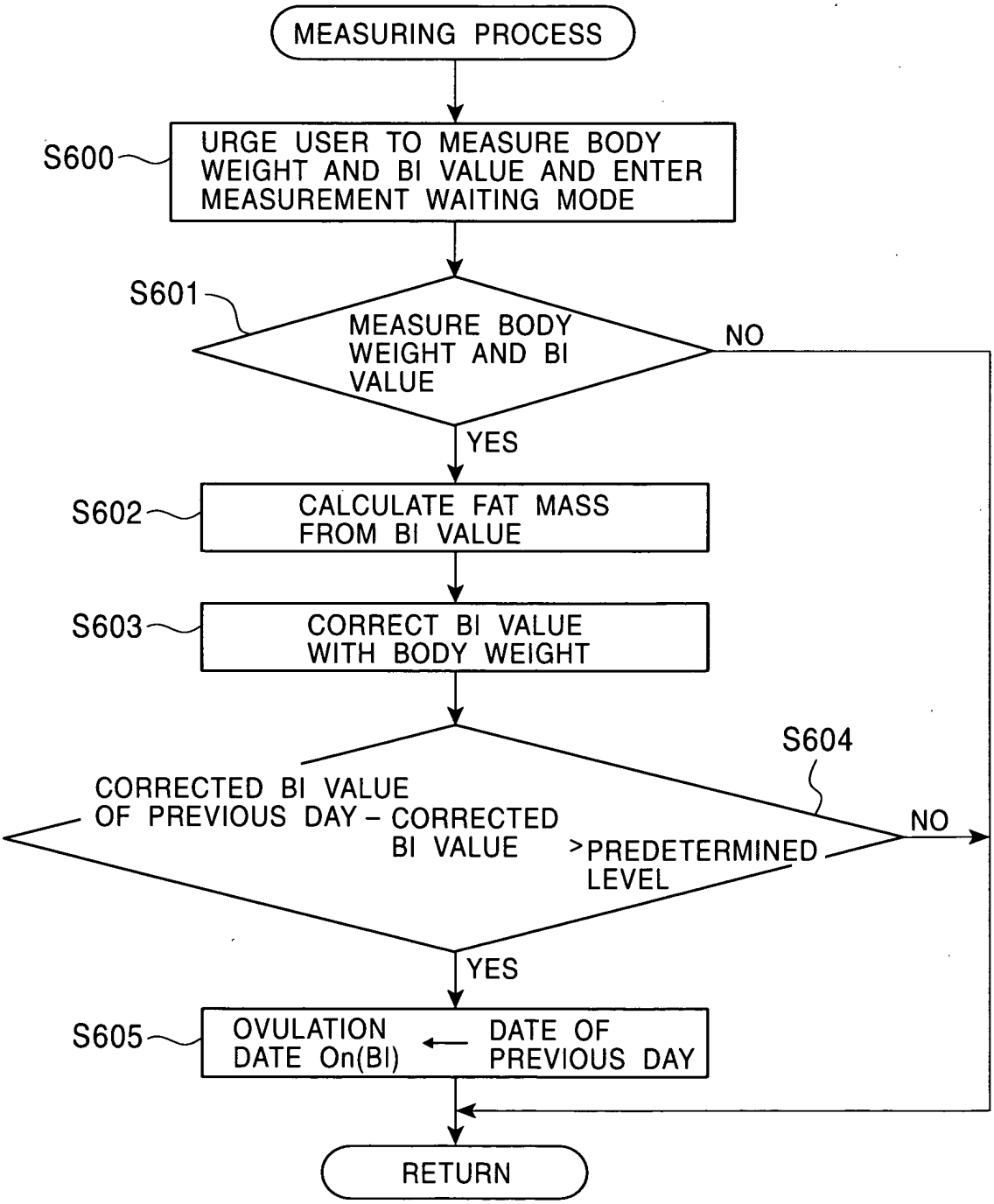

MEASURING PROCESS
S600
URGE USER TO MEASURE BODY WEIGHT AND BI VALUE AND ENTER MEASUREMENT WAITING MODE
S601
MEASURE BODY WEIGHT AND BI VALUE
NO
YES
S602
CALCULATE FAT MASS FROM BI VALUE
S603
CORRECT BI VALUE WITH BODY WEIGHT
S604
CORRECTED BI VALUE OF PREVIOUS DAY – CORRECTED BI VALUE
>PREDETERMINED LEVEL
NO
YES
S605
OVULATION DATE On(BI)
DATE OF PREVIOUS DAY
RETURN

FIG. 6

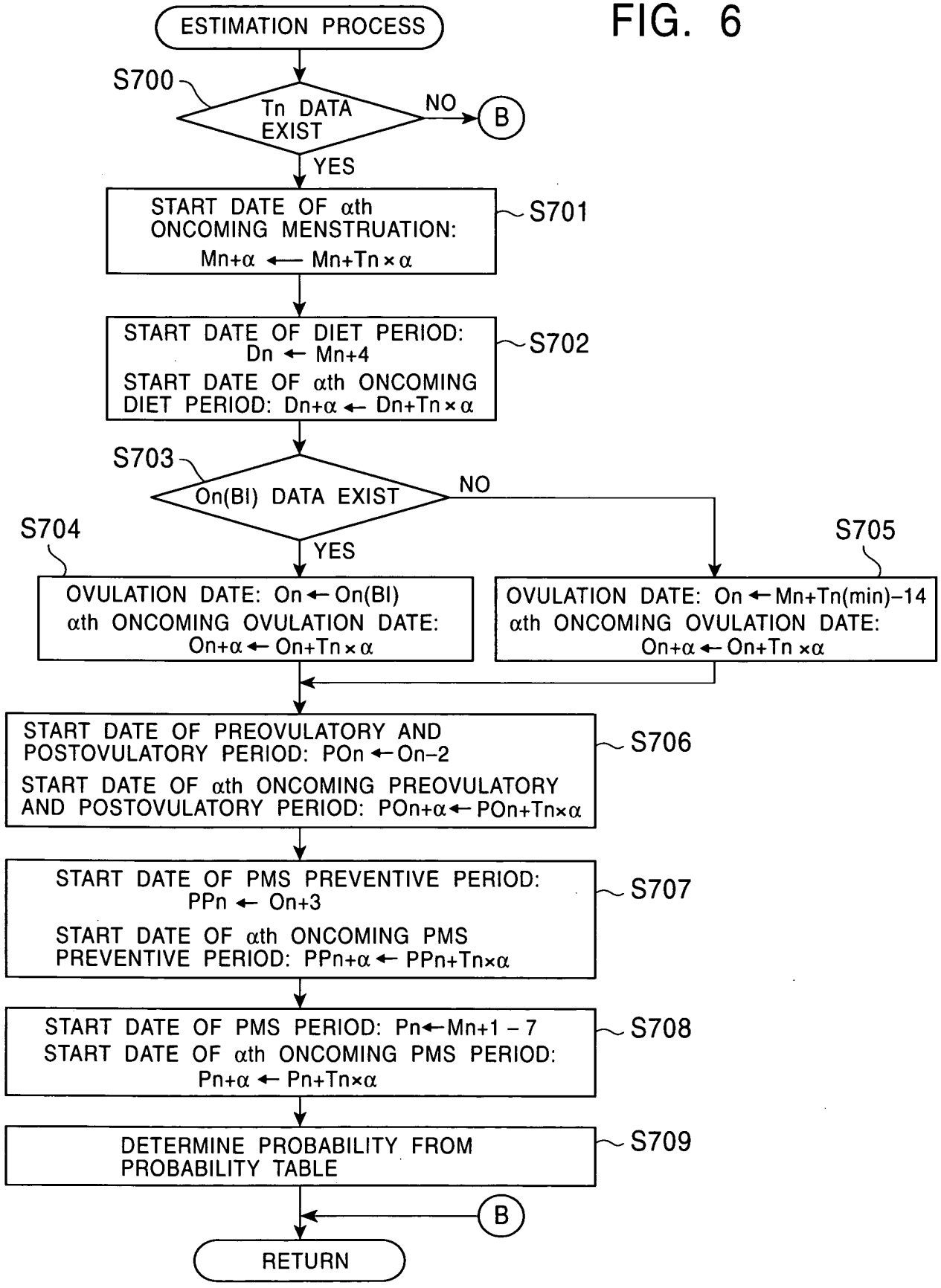

ESTIMATION PROCESS
S700
Tn DATA EXIST
NO
B
YES
START DATE OF αth ONCOMING MENSTRUATION: Mn+α ← Mn+Tn×α
S701
START DATE OF DIET PERIOD: Dn ← Mn+4
START DATE OF αth ONCOMING DIET PERIOD: Dn+α ← Dn+Tn×α
S702
S703
On(BI) DATA EXIST
NO
YES
S704
S705
OVULATION DATE: On ← On(BI)
αth ONCOMING OVULATION DATE: On+α ← On+Tn×α
OVULATION DATE: On ← Mn+Tn(min)−14
αth ONCOMING OVULATION DATE: On+α ← On+Tn×α
START DATE OF PREOVULATORY AND POSTOVULATORY PERIOD: POn ← On−2
START DATE OF αth ONCOMING PREOVULATORY AND POSTOVULATORY PERIOD: POn+α ← POn+Tn×α
S706
START DATE OF PMS PREVENTIVE PERIOD: PPn ← On+3
START DATE OF αth ONCOMING PMS PREVENTIVE PERIOD: PPn+α ← PPn+Tn×α
S707
START DATE OF PMS PERIOD: Pn ← Mn+1 − 7
START DATE OF αth ONCOMING PMS PERIOD: Pn+α ← Pn+Tn×α
S708
DETERMINE PROBABILITY FROM PROBABILITY TABLE
S709
B
RETURN

FIG. 7

| NUMBER OF INPUTS n | PRESENT CYCLE | 1st ONCOMING CYCLE | 2nd ONCOMING CYCLE | 3rd ONCOMING CYCLE | ・・・ | 11th ONCOMING CYCLE | 12th ONCOMING CYCLE |
|---|---|---|---|---|---|---|---|
| 0 ~ 1 | -- | -- | -- | -- | -- | -- | -- |
| 2 ~ 5 | 65% | 50% | 40% | 30% | ・・・ | 5% | 5% |
| 6 ~ 10 | 85% | 75% | 65% | 50% | ・・・ | 20% | 15% |
| 11 ~ 20 | 95% | 85% | 75% | 65% | ・・・ | 40% | 35% |
| 21 ~ 30 | 98% | 95% | 90% | 75% | ・・・ | 52% | 48% |
| 31 ~ 40 | 98% | 98% | 95% | 90% | ・・・ | 70% | 65% |
| ・ | ・ | ・ | ・ | ・ | ・ | ・ | ・ |
| ・ | ・ | ・ | ・ | ・ | ・ | ・ | ・ |
| ・ | ・ | ・ | ・ | ・ | ・ | ・ | ・ |

FIG. 8

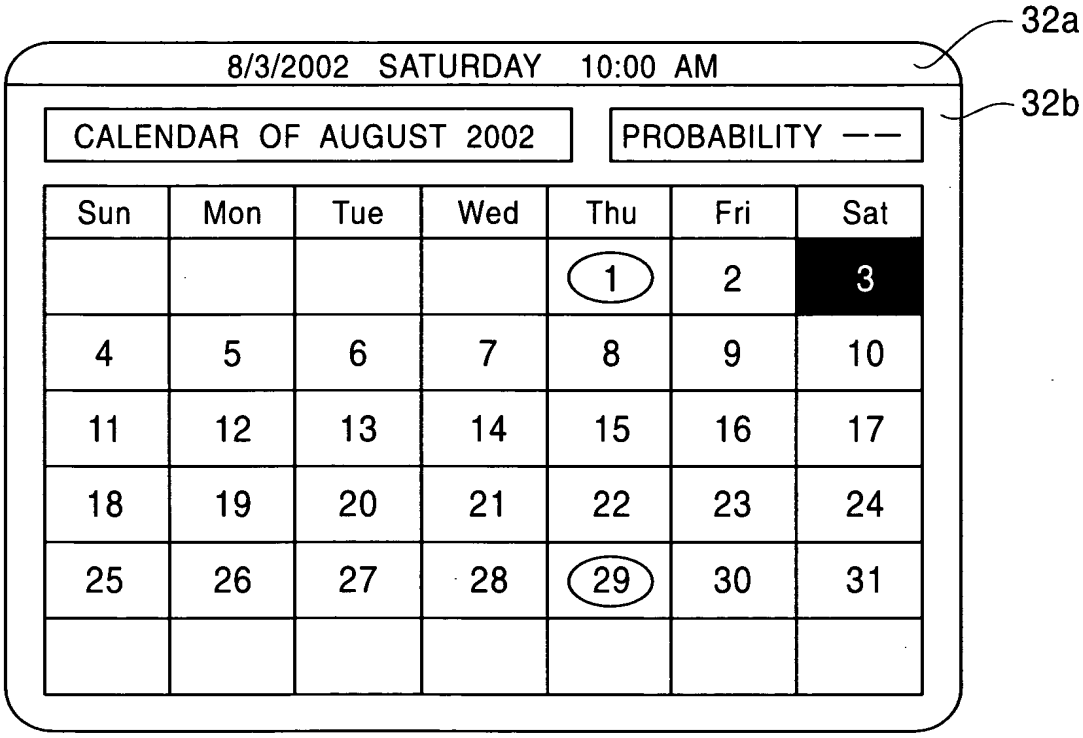

32a
8/3/2002 SATURDAY 10:00 AM
32b
CALENDAR OF AUGUST 2002
PROBABILITY ——
Sun Mon Tue Wed Thu Fri Sat
1 2 3
4 5 6 7 8 9 10
11 12 13 14 15 16 17
18 19 20 21 22 23 24
25 26 27 28 29 30 31

FIG. 9A

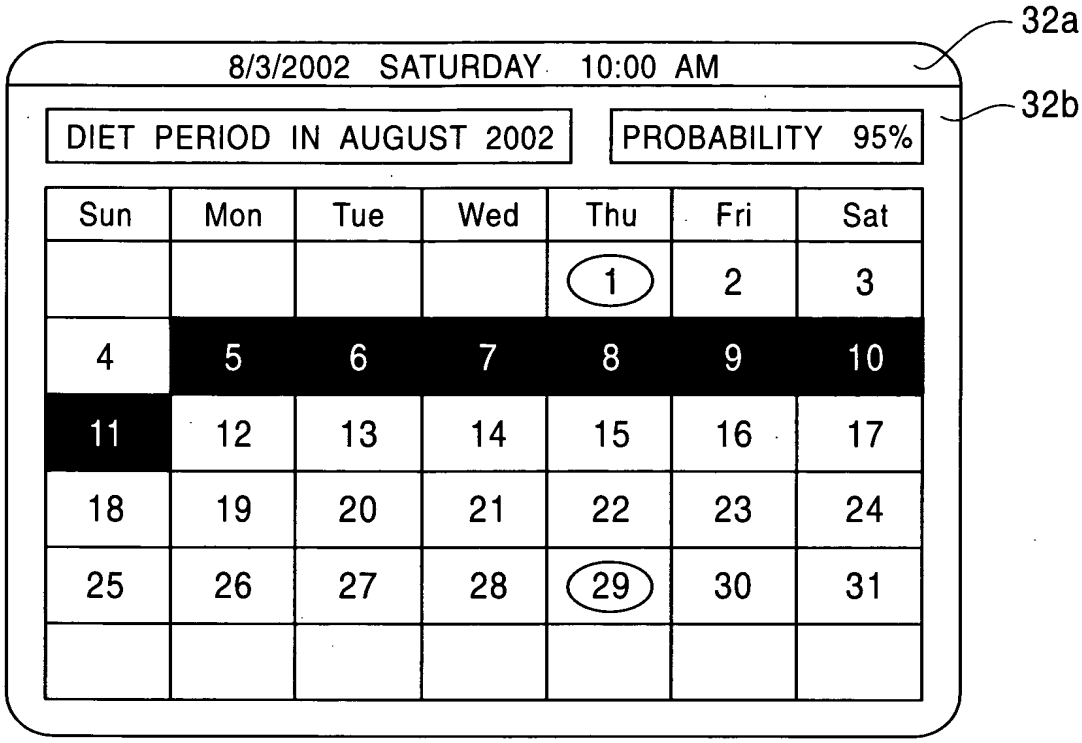

32a
8/3/2002 SATURDAY 10:00 AM
32b
DIET PERIOD IN AUGUST 2002
PROBABILITY 95%
Sun Mon Tue Wed Thu Fri Sat
1 2 3
4 5 6 7 8 9 10
11 12 13 14 15 16 17
18 19 20 21 22 23 24
25 26 27 28 29 30 31

FIG. 9B

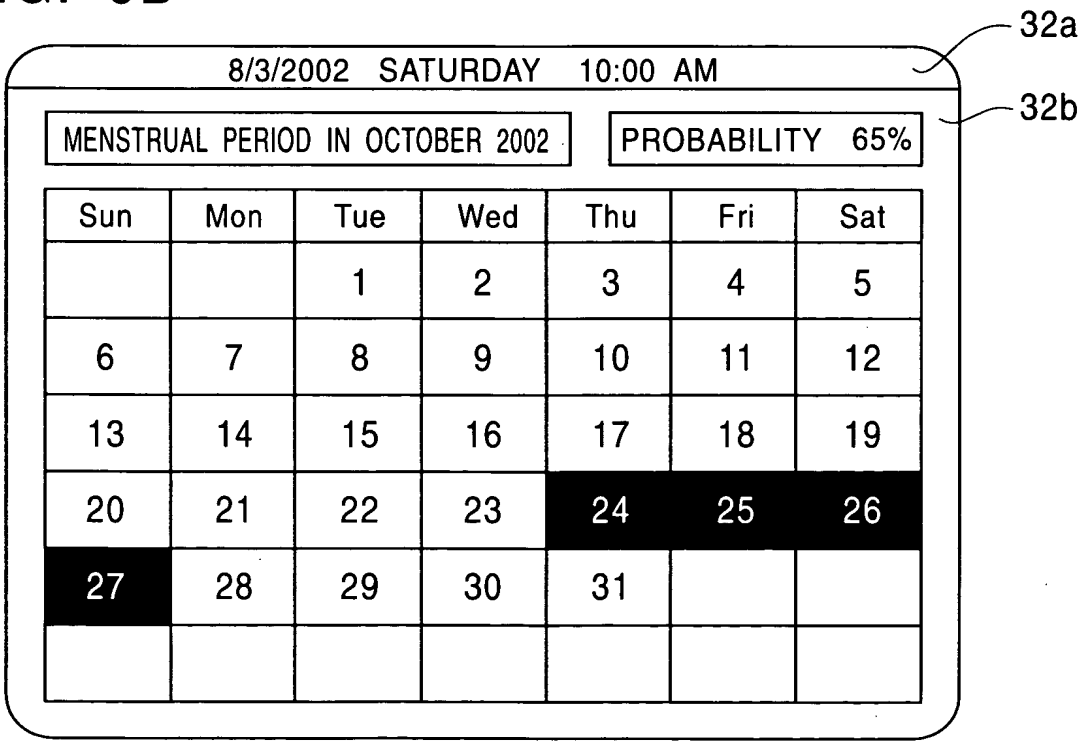

32a
8/3/2002 SATURDAY 10:00 AM
32b
MENSTRUAL PERIOD IN OCTOBER 2002
PROBABILITY 65%
Sun Mon Tue Wed Thu Fri Sat
1 2 3 4 5
6 7 8 9 10 11 12
13 14 15 16 17 18 19
20 21 22 23 24 25 26
27 28 29 30 31

FIG. 10A

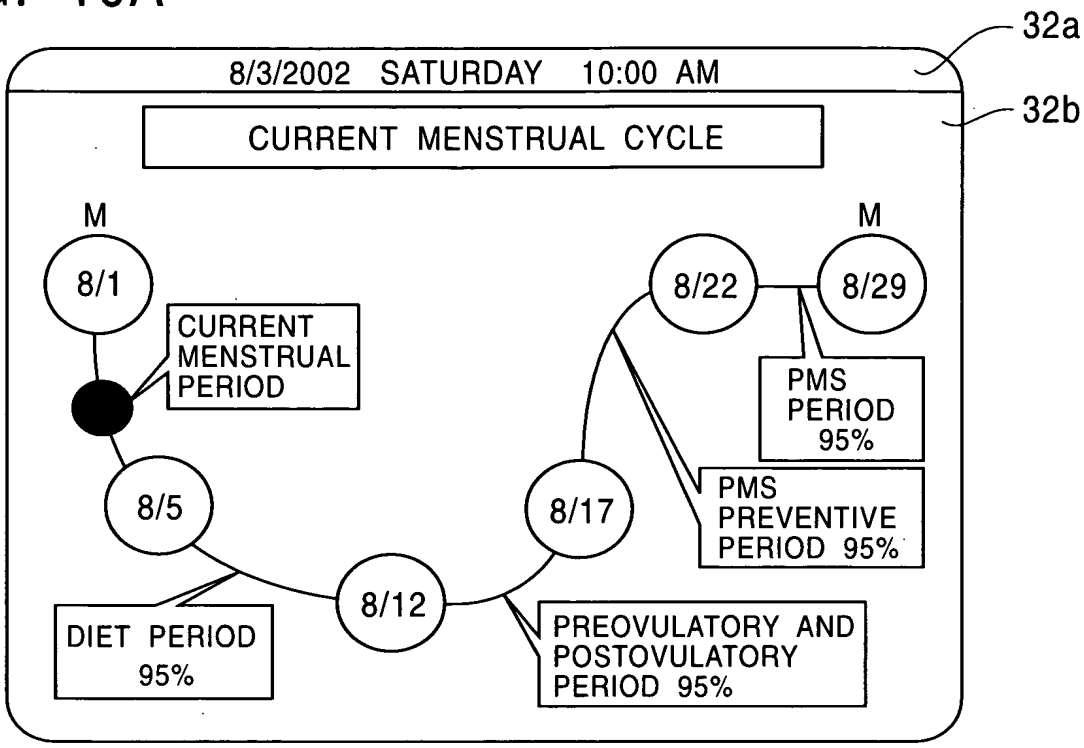



FIG. 10B

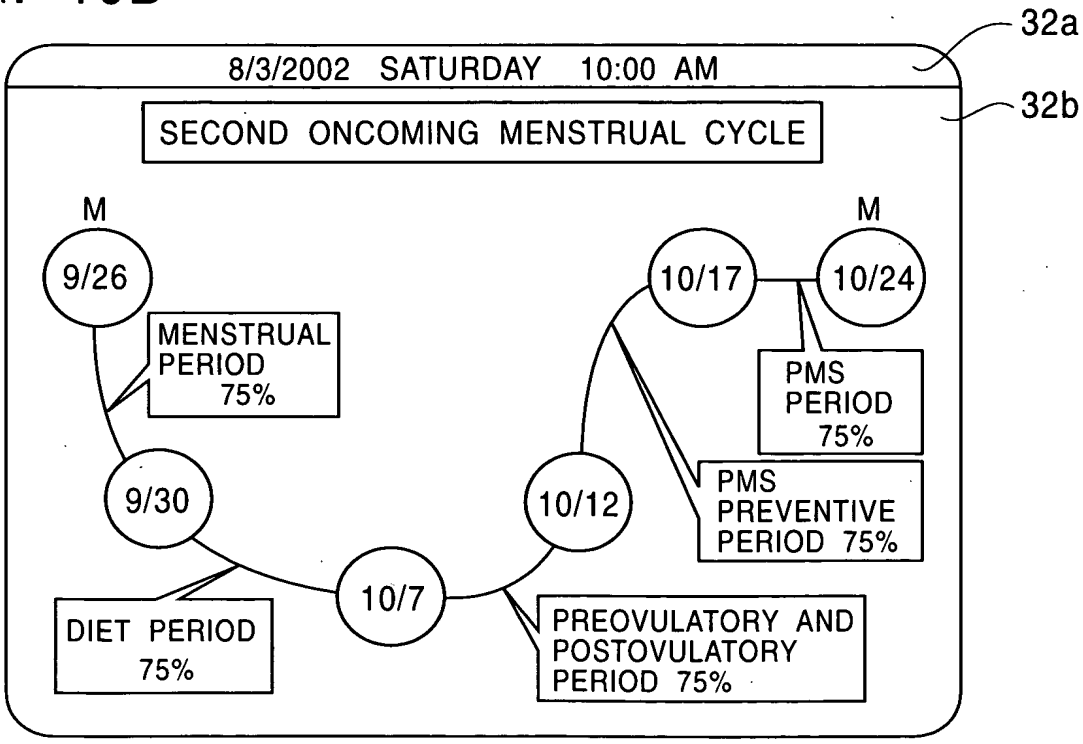


FIG. 11

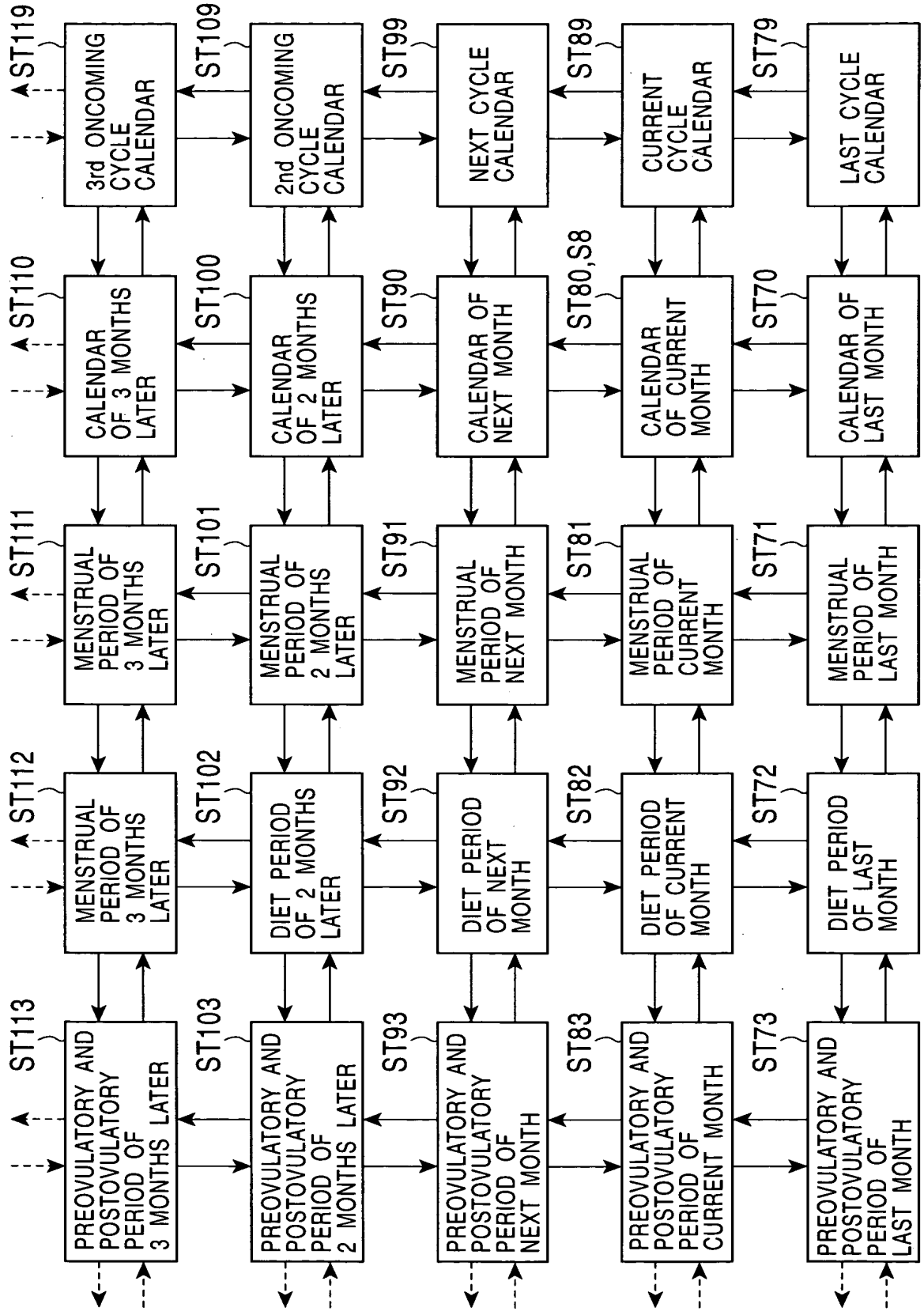

ST119
3rd ONCOMING CYCLE CALENDAR
ST109
2nd ONCOMING CYCLE CALENDAR
ST99
NEXT CYCLE CALENDAR
ST89
CURRENT CYCLE CALENDAR
ST79
LAST CYCLE CALENDAR
ST110
CALENDAR OF 3 MONTHS LATER
ST100
CALENDAR OF 2 MONTHS LATER
ST90
CALENDAR OF NEXT MONTH
ST80,S8
CALENDAR OF CURRENT MONTH
ST70
CALENDAR OF LAST MONTH
ST111
MENSTRUAL PERIOD OF 3 MONTHS LATER
ST101
MENSTRUAL PERIOD OF 2 MONTHS LATER
ST91
MENSTRUAL PERIOD OF NEXT MONTH
ST81
MENSTRUAL PERIOD OF CURRENT MONTH
ST71
MENSTRUAL PERIOD OF LAST MONTH
ST112
MENSTRUAL PERIOD OF 3 MONTHS LATER
ST102
DIET PERIOD OF 2 MONTHS LATER
ST92
DIET PERIOD OF NEXT MONTH
ST82
DIET PERIOD OF CURRENT MONTH
ST72
DIET PERIOD OF LAST MONTH
ST113
PREOVULATORY AND POSTOVULATORY PERIOD OF 3 MONTHS LATER
ST103
PREOVULATORY AND POSTOVULATORY PERIOD OF 2 MONTHS LATER
ST93
PREOVULATORY AND POSTOVULATORY PERIOD OF NEXT MONTH
ST83
PREOVULATORY AND POSTOVULATORY PERIOD OF CURRENT MONTH
ST73
PREOVULATORY AND POSTOVULATORY PERIOD OF LAST MONTH

FIG. 12A

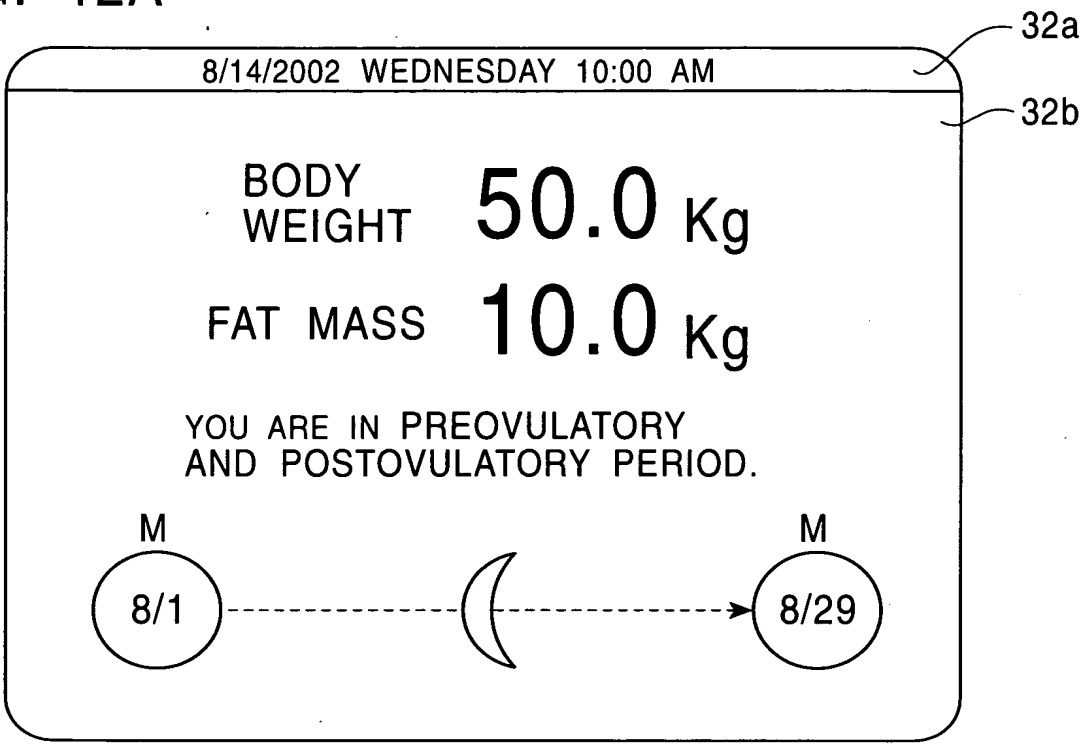



FIG. 12B

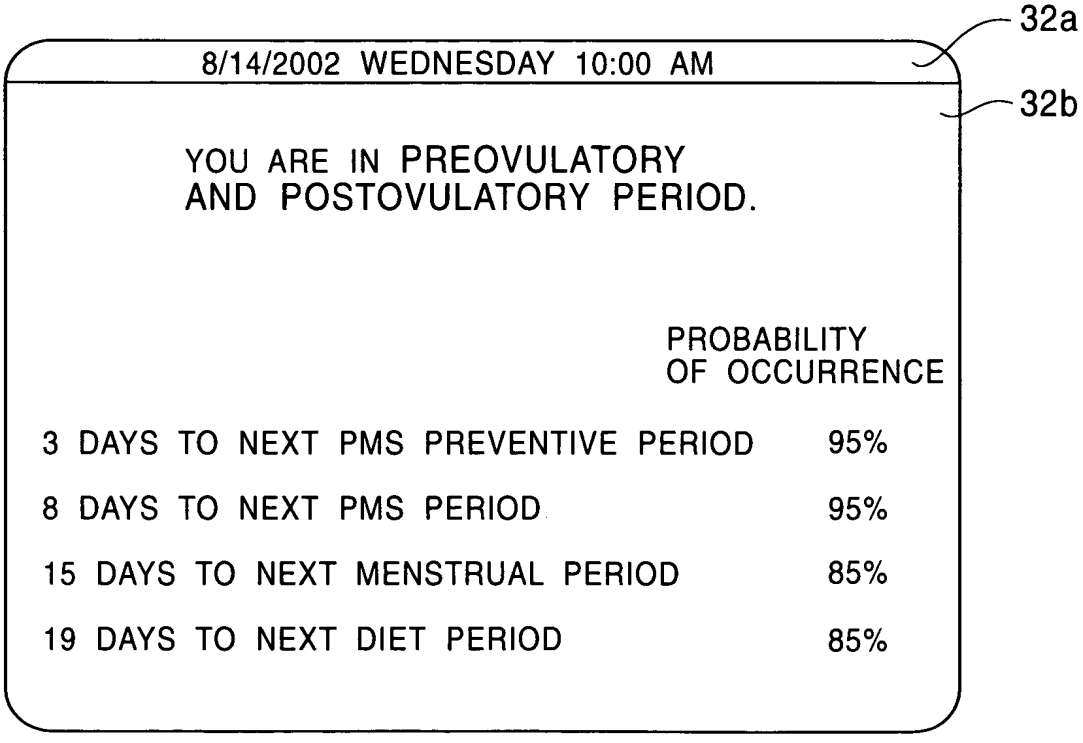


FIG. 13

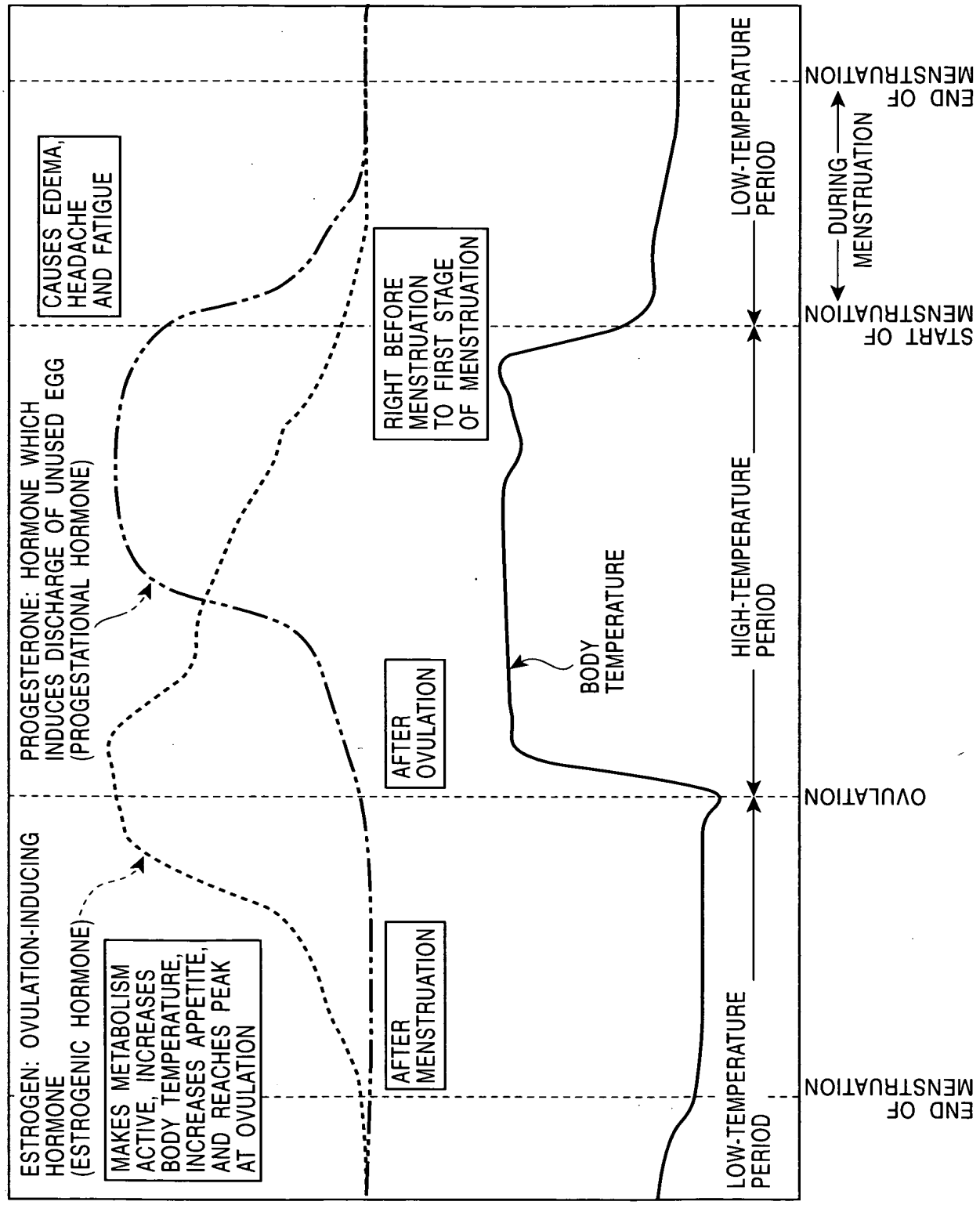
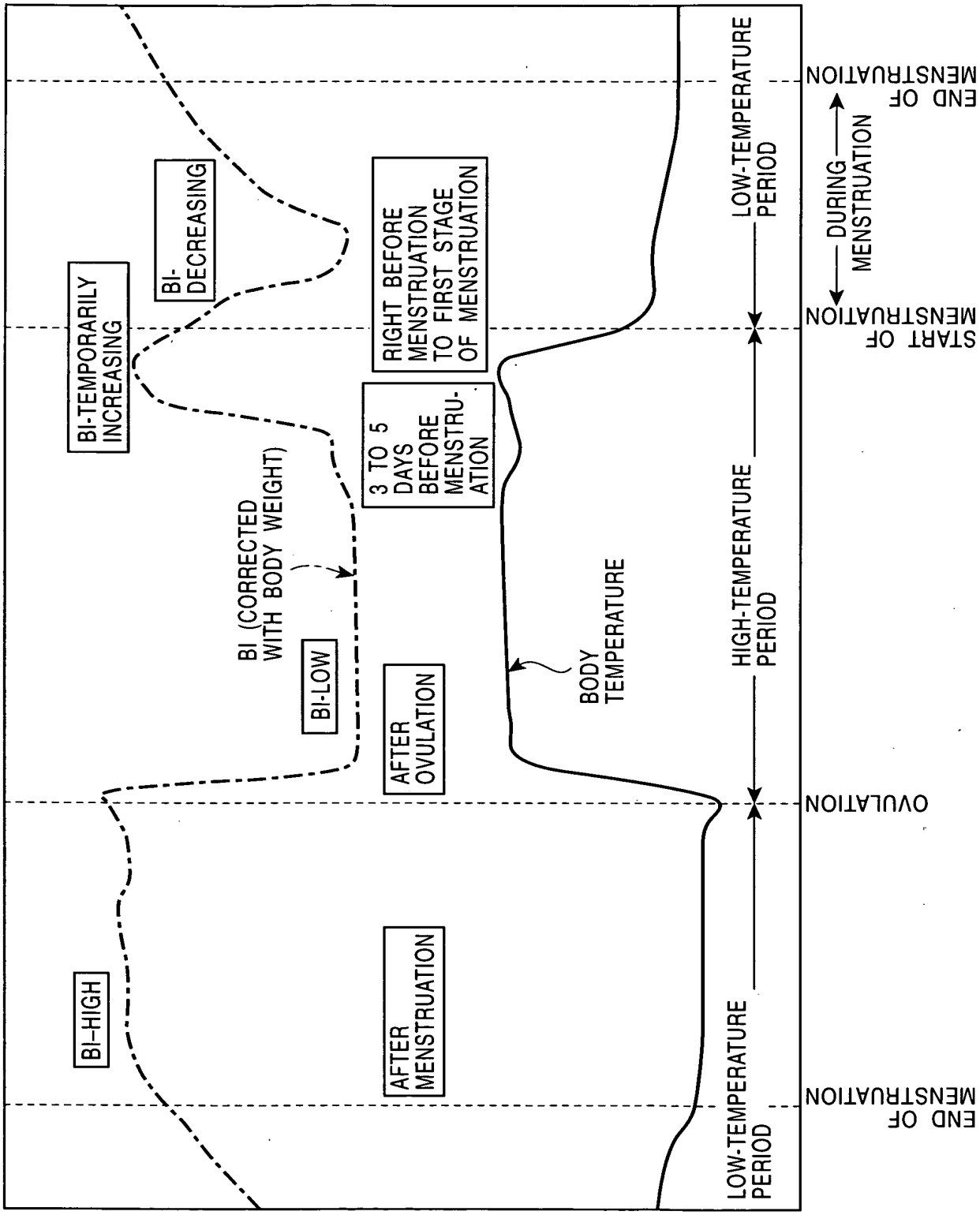

ESTROGEN: OVULATION-INDUCING HORMONE (ESTROGENIC HORMONE)
MAKES METABOLISM ACTIVE, INCREASES BODY TEMPERATURE, INCREASES APPETITE, AND REACHES PEAK AT OVULATION
AFTER MENSTRUATION
PROGESTERONE: HORMONE WHICH INDUCES DISCHARGE OF UNUSED EGG (PROGESTATIONAL HORMONE)
CAUSES EDEMA, HEADACHE AND FATIGUE
AFTER OVULATION
RIGHT BEFORE MENSTRUATION TO FIRST STAGE OF MENSTRUATION
BODY TEMPERATURE
LOW-TEMPERATURE PERIOD
HIGH-TEMPERATURE PERIOD
LOW-TEMPERATURE PERIOD
END OF MENSTRUATION
OVULATION
START OF MENSTRUATION
DURING MENSTRUATION
END OF MENSTRUATION

FIG. 14


BI-HIGH
BI-TEMPORARILY INCREASING
BI-DECREASING
BI-LOW
BI (CORRECTED WITH BODY WEIGHT)
AFTER MENSTRUATION
AFTER OVULATION
3 TO 5 DAYS BEFORE MENSTRU-ATION
RIGHT BEFORE MENSTRUATION TO FIRST STAGE OF MENSTRUATION
BODY TEMPERATURE
LOW-TEMPERATURE PERIOD
HIGH-TEMPERATURE PERIOD
LOW-TEMPERATURE PERIOD
END OF MENSTRUATION
OVULATION
START OF MENSTRUATION
END OF MENSTRUATION
DURING MENSTRUATION